John Please

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SEARCH REQUEST FORM

7-1006

Requestor's Name: Sabiha Qazi

Serial Number: 09/335,022

Date: 7/29/99 Phone: 305-3410 Art Unit: 1616 3807

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Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevent citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevent claim(s).

Process of purification / separation of Vit D_3 or pre Vit. D_3 from mixtures.

Please see attached sheets.

Point of Contact:
John Dantzman
Technical Info. Specialist
CM1 1E05 Tel: 308-4488

Priority 9511490.3 6/23/98

Inventors: Monika Johannsen

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Date completed: 8-7-99
Searcher: JOHN DANTZMAN
Terminal time: 30
Elapsed time:
CPU time:
Total time: 40 50
Number of Searches:
Number of Databases:

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- ✓ CM-1
- ___ Pre-S

Type of Search

- ___ N.A. Sequence
- ___ A.A. Sequence
- ___ Structure
- ✓ Bibliographic

Vendors

- ✓ IG
- ___ STN
- ___ Dialog
- ___ APS
- ___ Geninfo
- ___ SDC
- ___ DARC/Questel
- ___ Other

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=>  D HIS

     (FILE 'HCAPLUS' ENTERED AT 08:33:24 ON 07 AUG 1999)
               DEL HIS Y

     FILE 'REGISTRY' ENTERED AT 08:36:53 ON 07 AUG 1999
               E VITAMIN D3/CN
L1           31 S VITAMIN D3?/CN

     FILE 'HCAPLUS' ENTERED AT 08:37:29 ON 07 AUG 1999
L2         7851 S L1 OR VITAMIN D3
L3           57 S VITAMIN D 3
L4        12623 S ?VITAMIN(W)(D 3 OR D3)
L5        13348 S L2-L4
L6          493 S L5 AND CHROMATOGR?
L7          230 S L5 AND (COL OR COLUMN)(2A)(CHROMAT?)
L8          594 S L5 AND (LIQ OR LIQUID)(2A)(CHROMAT?)
L9          494 S L5 AND HPLC
L10         662 S L7-L8
L11         476 S L10 AND (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR SEPARAT?
OR

     FILE 'REGISTRY' ENTERED AT 08:41:35 ON 07 AUG 1999
L12        1101 S CARBON DIOXIDE?/CN

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L13           2 S L11 AND (CO2 OR CARBON DIOXIDE OR L12)
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L15          79 S L11 AND (SILICA GEL OR SIO2 OR SILICA)
L16           2 S L15 AND IRRADIAT?
L17        1419 S (L3-L5)(9A) (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR
SEPARAT
L18         213 S L10 AND L17
L19          15 S L17(9A)(COL OR COLUMN)(2A)(CHROMAT?)
L20          54 S L17(9A)((LIQ OR LIQUID)(2A)(CHROMAT?))
L21          40 S L17(9A)HPLC
L22          96 S L19-L21
L23          21 S L22 AND  (SILICA GEL OR SIO2 OR SILICA)
L24           0 S L23 AND IRRADIAT?

     FILE 'LIFESCI, SCISEARCH, WPIDS, JICST-EPLUS' ENTERED AT 08:50:09 ON 07
     AUG 1999
L25        5555 S (VITAMIN OR PREVITAMIN)(W)(D3 OR D 3)
L26         329 S L25(9A)(PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR SEPARAT?
OR
L27           3 S L26(9A)(COL OR COLUMN)(2A)(CHROMAT?)
L28          14 S L26(9A)(LIQ OR LIQUID)(2A)(CHROMAT?)
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L32          19 S L27-L29
L33          19 DUP REMOV L32 (0 DUPLICATES REMOVED)
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=> D L16 1-2 BIB ABS

L16 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 1999 ACS
AN 1990:598104 HCAPLUS
DN 113:198104
TI HPLC determination of vitamin D preparation
AU Zhang, Yi; Yang, Gang; Ding, Yinfen; Chen, Rujin
CS Fujian Prov. Inst. Drug Control, Fuzhou, 350000, Peop. Rep. China
SO Zhongguo Yiyao Gongye Zazhi (1990), 21(6), 256-61
CODEN: ZYGZEA
DT Journal
LA Chinese
AB In the column system suitability test following **irradn.** of heated **vitamin D3** soln. by UV with main wave length 254 and 365 nm for 5 min, 6 isomers were **sepd.** with the normal-phase HPLC (Waters Resolve **Silica** column, 0.3% n-pentanol in hexane as mobile phase, detected at 254 nm), with resoln. factor, R, >1.0. The linearity was obtained in 0.5-60 .mu.g **vitamin D3**. The low concn. (1 ppm) prepn. could be detd. by internal (di-Me phthalate) method or external (thermal equil.) method with error 10%. The error in detn. of high-concn. prepn. was 3%.

L16 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 1999 ACS
AN 1983:214238 HCAPLUS
DN 98:214238
TI Individual quantitation of vitamin D2, **vitamin D3**, 25-hydroxyvitamin D2, and 25-**hydroxyvitamin D3** in human milk
AU Hollis, Bruce W.
CS Sch. Med., Case Western Reserve Univ., Cleveland, OH, 44106, USA
SO Anal. Biochem. (1983), 131(1), 211-19
CODEN: ANBCA2; ISSN: 0003-2697
DT Journal
LA English
AB Extn., lipid-redn., and chromatog. methods suitable for the resoln. and subsequent quantitation of vitamin D2 [50-14-6], **vitamin D3** [**67-97-0**], 25-hydroxyvitamin D2 [21343-40-8] and 25-**hydroxyvitamin D3** [19356-17-3] from human milk are described. This procedure utilizes a MeOH:CH2Cl2 extn., pptn. of unwanted lipids with cold MeOH and Et2O, backwash with alk. buffer, **silica Sep**-Pak preparative chromatog., normal- and reverse-phase high-performance **liq. chromatog.** with final quantitation of the antirachitic sterols by competitive protein binding assay. The described assay was used to det. these antirachitic sterols in milk from women receiving various supplements of vitamin D [1406-16-2] or undergoing UV phototherapy.

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L33          19 DUP REMOV L32 (0 DUPLICATES REMOVED)
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=> D L23 BIB ABS HITRN 1-21

L23 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1998:300990 HCAPLUS
DN 128:319005
TI Aminopropyl-**silica** as an advantageous alternative to nonpolar sorbents for continuous cleanup/preconcentration of vitamin D3 metabolites
AU Ortiz Boyer, F.; Fernandez Romero, J. M.; Luque de Castro, M. D.; Quesada, J. M.
CS Dep. Analytical Chemistry, Fac. Sci., Univ. Cordoba, Cordoba, E-14004, Spain
SO Chromatographia (1998), 47(7/8), 367-372
CODEN: CHRGB7; ISSN: 0009-5893
PB Friedrich Vieweg & Sohn Verlagsgesellschaft mbH
DT Journal
LA English
AB A new procedure for continuous cleanup and concn. of **hydroxyvitamin D3** metabolites prior to their **sepn.** by **HPLC** and UV-detection is reported. The process is based on the use of aminopropyl-**silica** as solid-phase sorbent as an alternative to the use of non-polar sorbents. The improvement thus achieved was tested by comparing the results with those obtained using octadecyl-C18 as non-polar sorbent. The comparison was based on the calibration graphs (linear range, detection and quantitation limits), precision and multiple std. addn. method.

L23 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1995:291901 HCAPLUS
DN 122:131343
TI Determination of vitamin D3 in fish meals by HPLC.
AU Horvli, Ole; Lie, Oeyvind
CS Institute Nutrition, Directorate Fisheries, Bergen, N-5024, Norway
SO Fiskeridir. Skr., Ser. Ernaer. (1994), 6(2), 163-75
CODEN: FSSEDG; ISSN: 0332-5083
DT Journal
LA English
AB An **HPLC** method for the **sep.** anal. of vitamin D2 or **vitamin D3**, using the alternate form as an internal std. and UV-detection, is described. The method involves sapon. and extn. of small samples (0.25 g) in small tubes (10 mL), sample clean-up on a **silica** column, and anal. on a C18-column, both by HPLC. The limit of detection was 1.3 ng, or 5.2ng/g sample. The intra-assay precision (CV) was 5.6% (n=8), and the accuracy was .+-.17% deviation from a std. Fifteen fish meals were analyzed for vitamin D3 by the method described, the samples were also detd. by a chick bioassay method.

L23 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1994:69719 HCAPLUS
DN 120:69719
TI Scintillation proximity assay for calcitriol in serum without high pressure liquid chromatography
AU Wildermuth, Susanne; Dittrich, Karin; Schmidt-Gayk, Heinrich; Zahn, Ingrid; O'Riordan, J. L. H.

CS Univ. Heidelberg, Heidelberg, Germany
SO Clin. Chim. Acta (1993), 220(1), 61-70
CODEN: CCATAR; ISSN: 0009-8981
DT Journal
LA English
AB A rapid **isolation** step for 1,25-**dihydroxyvitamin D3** without high pressure **liq. chromatog.** (**HPLC**) and a sensitive RIA have been developed. The time required for extn. and isolation with a combination of Extrelut-1-minicolumns and SepPak **silica** cartridges from as little as 0.5 mL serum is only 2 h. The assay can be counted after 8 h of incubation. It is performed in the vial that collects the eluate, thus eliminating transfer losses and errors. No sepn. of bound and free hormone is necessary before .beta.-counting in the scintillation proximity assay. The detection limit of the assay is 2.7 ng/L. The intraassay coeffs. of variation are 7.3% and 5.2% for samples with calcitriol concns. of 31 and 148 ng/L, resp. The interassay coeffs. of variation are 11.3%, 13.3% and 16.1% for low (16 ng/L), medium (30 ng/L) and high (148 ng/L) control pool samples, resp. Normal values for calcitriol range from 32 to 80 ng/L. Elderly subjects, patients with reduced kidney function, and pregnant women were also evaluated for their calcitriol levels. This assay correlates well with a RIA employing HPLC prepurifn. and charcoal sepn. of bound/free calcitriol (r = 0.94).

L23 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1992:446862 HCAPLUS
DN 117:46862
TI Reversed-phase liquid chromatographic determination of vitamin D in infant formulas and enteral nutritionals
AU Sliva, Matthew G.; Green, Astor E.; Sanders, James K.; Euber, John R.; Saucerman, Janice R.
CS Bristol-Myers Squibb, Evansville, IN, 47721-0001, USA
SO J. AOAC Int. (1992), 75(3), 566-71
CODEN: JAINEE
DT Journal
LA English
AB Vitamin D in infant formulas and enteral nutritional products was detd. by reversed-phase liq. chromatog. (LC) with UV detection at 265 nm. The sample was sapond. 30 min at 60.degree. and extd. into 60 mL hexane. The hexane layer was then washed and evapd. to dryness. The sample was reconstituted and added to a 3 mL **silica** solid-phase extn. column. Vitamin D2 and D3 were eluted from the column with 7 mL methylene chloride-isopropanol mixt. (99.8 + 0.2). The eluent was evapd. to dryness and reconstituted in 1 mL acetonitrile. The acetonitrile soln. was analyzed on a C18 reversed-phase LC column (Vydac 20ITP54, 25 cm .times. 4.6 mm, 5 .mu.m particle size); sepn. required a column that was not endcapped. Linearity for this method between 8 and 2600 IU/qt showed a coeff. of detn. of 1.000, with method precision ranging 1-6%. Spike recoveries gave a mean of 99.1%. Because this method can quantitate and distinguish between vitamin D2 and vitamin D3 in products, vitamin D2 was

used as an internal std. in quantitating vitamin D3, and vice versa. The sample throughput was estd. to be 24 per day. The method is applicable to milk-, soy-, and protein hydrolyzate-based infant formulas and enteral nutrition products, both liq. and powder.

L23 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1990:402755 HCAPLUS
DN 113:2755
TI Extraction and chromatographic **separation** of 1,25-dihydroxy-**vitamin D3** from blood serum or plasma without high-performance **liquid chromatography** (HPLC)
AU Armbruster, Franz Paul; Tampe, J.; Mueller, K. B.; Wiese, P.; Reichel, H.; Schmidt-Gayk, H.
CS Immundiagn. G.m.b.H., Bensheim, D-6140, Fed. Rep. Ger.
SO Aerztl. Lab. (1990), 36(4), 75-80
CODEN: AELAAH; ISSN: 0001-9526
DT Journal
LA German
AB 1,25-(OH)2-Vitamin D3 (I) was detd. in human blood plasma or serum by extn. on Extrelut-1 minicolumns with iPr2O, evapn. of the ext., and chromatog. sepn. from 25-(OH)-, 24,25-(OH)-, and 25,25-(OH)2-derivs. (II, III, resp.) either with disposal aminopropyl columns or Sep-Pak **SiO2** gel cartridges. For the former, an iPrOH/nC6H14 stepped gradient with iPrOH levels rising from 0.5-25% was employed as eluent, giving recoveries of 84, 0.7, 0.8, and 21% for I, II, III, and IV, resp. For the latter, a 4/96 iPrOH/nC6H4 mixt. was employed to elute II and III and a 275/75 mixt. for I. Recoveries for I, II, and III were 74.6, 0.5, and 4%, resp. Since the latter method does not require evapn. following Extrelut extn., it is better suited for routine, lab. detns.

L23 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1989:611291 HCAPLUS
DN 111:211291
TI Retention behavior of lipophile components in biological substances in **silica gel** liquid chromatography using aqueous binary solvent systems
AU Hara, Shoji; Ando, Tatsuhiko; Nakayama, Yoshiyuki
CS Tokyo Coll. Pharm., Tokyo, 192-03, Japan
SO Yakugaku Zasshi (1989), 109(9), 650-5
CODEN: YKKZAJ; ISSN: 0031-6903
DT Journal
LA Japanese
AB A high-performance liq.-liq. partition chromatog. system involving two immiscible liq. phases, water and a binary org. solvent, was made from a slurry packed **silica gel** column, operated by a droplet current to pump the org. solvent equilibrated at the same time as the water and a UV detector provided with a flow-type cell. The binary org. solvent, water satd. and contg. di-Et ether or ethanol in n-hexane as a phase system was used for the measurement of the retention indexes of lipophilic components in biol. substances such as cholesterol esters, lipophilic vitamins, and steroid hormones. The mol. structure of each solute was correlated to its resp. retention index by a linear relation between the logarithm of the capacity ratio and that of solvent compn. in the mobile phase solvent. The retention data thus obtained were directly related to the liq.-liq. distribution coeff. and thus applicable to making

the better selection of an appropriate optimum phase system for use in solvent extn. processes.

IT **67-97-0**, Cholecalciferol
RL: ANST (Analytical study)
(**sepn.** of, by **liq.-liq.** partition **chromatog.**, retention behavior in)

L23 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1989:133796 HCAPLUS
DN 110:133796
TI Simultaneous analysis of fat-soluble vitamins in foods and vitamin products by high-performance liquid chromatography
AU Kim, Poongzag; Kim, Chong Hyeak
CS Anal. Res. Support Sect., Korea Res. Inst. Chem. Technol., Daejeon, 302-343, S. Korea
SO Taehan Hwahakhoe Chi (1989), 33(1), 46-54
CODEN: DHWHAB; ISSN: 0418-2472
DT Journal
LA Korean
AB The extn. method and quant. anal. for the fat-sol. vitamins present in foods and vitamin products were investigated. The simultaneous sepn. and anal. of the vitamins by reverse-phase high-performance liq. chromatog. was conducted by using an isocratic elution with MeOH-H2O (95:5) on a Novapak C18 column. The detection of vitamins was achieved by a variable wavelength UV detector. To improve the sensitivity, detection wavelengths were set at the highest absorption bands (e.g. 330, 265, 285, and 290 nm) for the resp. vitamins. The anal. was finished within 40 min. Alk. hydrolysis and enzymic hydrolysis were investigated for sample prepn.; liq.-liq. extn. and liq.-solid extn. were attempted for the vitamins. Both hydrolysis methods were appropriate for the anal. of vitamins A, D, and E, while for the anal. of vitamin K the enzymic hydrolysis method demonstrated better results. Di-Et ether, pentane, and hexane gave the best recovery for the liq.-liq. extn. and a **silica** cartridge was used for the liq.-solid extn.

IT **67-97-0, Vitamin D3**
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in food and vitamin **products** by reverse-phase **HPLC** with UV detection)

L23 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1987:631849 HCAPLUS
DN 107:231849
TI A new tritium-release assay for 25-hydroxyvitamin D-1.alpha.-hydroxylase
AU Brown, Alex J.; Perlman, Kato; Schnoes, Heinrich K.; DeLuca, Hector F.
CS Coll. Agric. Life Sci., Univ. Wisconsin, Madison, WI, 53706, USA
SO Anal. Biochem. (1987), 164(2), 424-9
CODEN: ANBCA2; ISSN: 0003-2697
DT Journal
LA English
AB A new, rapid assay for 1.alpha.-hydroxylase (I) was developed using 25-hydroxy-[1.alpha.-3H]vitamin D3 as the substrate. Using the solubilized and reconstituted chick I, conversion of this substrate to 1,25-dihydroxyvitamin D3 causes the release of tritium into the aq. medium. This 3H2O can be easily sepd. from the labeled substrate by passing the reaction mixt. through a reverse-phase **silica** cartridge. The release of tritium is stereospecific as evidenced by the

lack of 3H2O formed when 25-hydroxy-[1.beta.-3H]vitamin D3 is used as the substrate. In parallel reactions contg. the 25-hydroxy-[26,27-3H]vitamin D3 substrate, **prodn.** of labeled 1,25-**dihydroxyvitamin D3** was assessed by extn. and **HPLC** and found to agree very closely with the amt. of 3H2O produced from 25-hydroxy-[1.alpha.-3H]vitamin D3, validating the accuracy of the new assay. Finally, a major advantage of the tritium-release assay for I is that the results are not affected by further metab. of the 1,25-dihydroxyvitamin D formed in the incubations.

L23 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1987:623363 HCAPLUS
DN 107:223363
TI Separation of fat-soluble vitamins with polymer-coated **silica**-based octadecyl bonded phase in reversed-phase liquid chromatography
AU Wahyuni, W. T.; Jinno, K.
CS Sch. Mater. Sci., Toyohashi Univ. Technol., Toyohashi, 440, Japan
SO HRC CC, J. High Resolut. Chromatogr. Chromatogr. Commun. (1987), 10(8), 464-5
CODEN: HCJCDB; ISSN: 0344-7138
DT Journal
LA English
AB Reversed-phase liq. chromatog. on a polymer-coated **silica**-based C-18 stationary phase with MeOH-MeCN (25:75) as mobile phase enables a complete sepn. of fat-sol. vitamins D2, D3, E, and E acetate.
IT **67-97-0, Vitamin D3**
RL: ANST (Analytical study)
(**sepn.** of, by reversed-phase **HPLC**, polymer-coated **silica**-based octadecyl bonded phase in)

L23 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1987:77989 HCAPLUS
DN 106:77989
TI Separation of photoisomers of provitamin D3 by chromatographic methods
AU Reichenbaecher, Manfred; Grosser, Marianne; Gliesing, Sabine; Fassler, Dieter; Matthey, Maria
CS Sekt. Chem., Friedrich-Schiller-Univ., Jena, Ger. Dem. Rep.
SO Z. Chem. (1986), 26(9), 332-3
CODEN: ZECEAL; ISSN: 0044-2402
DT Journal
LA German
AB **Provitamin D3, previtamin D3,** lumisterol3, tachysterol3, and **vitamin D3** were **sepd.** by **HPLC** and thin-layer chromatog. The stationary phases were Sephadex LH-20 and **silica gel.** Various solvent compns. were tested.

L23 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1986:564190 HCAPLUS
DN 105:164190
TI Isomer separation by reversed-phase liquid chromatography using 2-(1-pyrenyl)ethyl-bonded stationary phase. Separation of unsaturated compounds
AU Tanaka, Nobuo; Tachibana, Yuji; Araki, Mikio
CS Fac. Text. Sci., Kyoto Inst. Technol., Kyoto, 606, Japan
SO Nippon Kagaku Kaishi (1986), (7), 993-8

CODEN: NKAKB8; ISSN: 0369-4577
DT Journal
LA Japanese
AB Sepns. of positional isomers and geometrical isomers of unsatd. compds. were examd. by using octadecylsilylated (C18) phase and 2-(1-pyrenyl)ethylsilylated (PYE) phase on **silica gel** in reversed-phase liq. chromatog. The C18 phase showed preferential retention of solutes with double bonds at an internal position and with E configuration. The results can be explained in terms of the hydrophobic property of each solute. The interaction between double bonds in a solute and pyrene rings of the PYE phase contributed to the unique selectivity of this stationary phase. Stronger interactions were obsd. with a double bond at a terminal position and with an internal double bond with Z configuration. The tendency can be explained by the steric effect of substituents on the sp2 C atoms. The electronic interaction was pronounced in a mobile phase of high MeOH contents, because of the smaller contribution of hydrophobic interaction in such a mobile phase. In the case of unsatd. carboxylic acid derivs., the PYE phase showed preferential retention for solutes possessing double bonds away from the carboxyl group, and provided sepn. between linolenic acid and .gamma.-linolenic acid, which cannot be sepd. by the C18 phase. The complementary use of the PYE phase, which has widely different selectivity, with the C18 phase will increase the capability of reversed-phase liq. chromatog.
IT **67-97-0**
RL: ANST (Analytical study); PROC (Process)
(**sepn.** of, from vitamin D2 by reversed-phase **liq. chromatog.** on pyrenylethylsilylated stationary phase)

L23 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1985:610225 HCAPLUS
DN 103:210225
TI Improved chromatographic determination of 25-hydroxyvitamins D2 and D3
AU Coldwell, Ruth D.; Trafford, David J. H.; Makin, Hugh L. J.
CS Med. Coll., London Hosp., London, E1 2AD, UK
SO Clin. Chem. (Winston-Salem, N. C.) (1985), 31(11), 1919-20
CODEN: CLCHAU; ISSN: 0009-9147
DT Journal
LA English
AB A liq. chromatog. method is described for the detn. of 25-hydroxyvitamin D2 and 25-hydroxyvitamin D3 in plasma which does not require 2 liq. chromatog. steps and does not give rise to contaminating peaks. The method involves extn. and preliminary purifn. by chromatog. on cartridges prepacked with microparticulate **silica**, followed by conversion to isotachysterol isomers and straight-phase HPLC with UV detection at 301 nm (a secondary absorption max.), thus eliminating interference by unconverted 25-hydroxyvitamin D. The detection limit for 25-hydroxyvitamin D3 was 0.5 .mu.g/L in 2 mL plasma.

L23 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1985:403068 HCAPLUS
DN 103:3068
TI Comparison of **HPLC separation** of **vitamin**

D3 metabolites and their isotachysterol3 derivatives
AU Koskinen, Timo; Valtonen, Pirjo
CS Dep. Clin. Sci., Univ. Tampere, Tampere, SF-33520, Finland
SO J. Liq. Chromatogr. (1985), 8(3), 463-72
CODEN: JLCHD8; ISSN: 0148-3919
DT Journal
LA English
AB Sepn. of vitamin D3, its 4 metabolites and their corresponding isotachysterol3 derivs. was studied by using 4 HPLC systems: two reversed phase columns, a **silica** column and a cyanopropyl **silica** column. Most of them gave a good sepn. between the compds. studied, although both reversed phase systems were less efficient in the sepn. of dihydroxylated vitamin D3 metabolites and isotachysterol compds. Isotachysterol3 derivs. behaved analogously to their vitamin D3 counterparts on all 4 systems, but their retention times were different. This indicates that chem. derivatization to isotachysterols can be used as a part of chromatog. identification of unknown vitamin D3 metabolites as well as in the detn. of major vitamin D3 compds. in biol. samples.

L23 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1985:106428 HCAPLUS
DN 102:106428
TI **Separation** of hydroxylated **vitamin D3** metabolites by high-performance **liquid chromatography**
AU Moysan, J. F.; Berthou, F.; Floch, H. H.
CS Lab. Biochim., Fac. Med. Brest, Brest, 29200, Fr.
SO Pathol. Biol. (1984), 32(8), 825-7
CODEN: PTBIAN; ISSN: 0031-3009
DT Journal
LA French
AB The hydroxylated metabolites of **vitamin D3** were **sepd.** by normal-phase **HPLC** on Spherisorb 5SW-5, Radpak **silica**-10 .mu.m, and Zorbax **silica**-5 .mu.m columns and by reversed-phase HPLC on Vydac 201 TP C18-5 .mu.m, Radpak C18-10 .mu.m, and Ultraspher C18-5 columns. With the normal-phase chromatog. systems, the order of elution of the hydroxylated metabolites was 25-hydroxyvitamin D3 and (E)-25-hydroxyvitamin D3, then (24R), 25-dihydroxyvitamin D3, 25(S), 26-dihydroxyvitamin D3, and 1.alpha.,25-dihydroxyvitamin D3. However, this order of elution was variable with the Radpak **silica** column as a function of the nature of the mobile phase. The level of MeOH in the mobile phase had a crit. effect on the sepn. and caused the appearance of perfectly sym. peaks. With the reversed-phase chromatog. systems, the order of elution of the metabolites was the opposite of the above elution order. In addn., the Z and E isomers of 25-hydroxyvitamin D3 could be sepd., in contrast to adsorption chromatog.
IT **67-97-0D**, hydroxylated metabolites
RL: PROC (Process)
(**sepn.** of, by **HPLC**)

L23 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1984:469885 HCAPLUS
DN 101:69885
TI Lipophilic conjugates of vitamin D3 in humans
AU Zagalak, B.; Neuheiser, F.; Curtius, H. C.

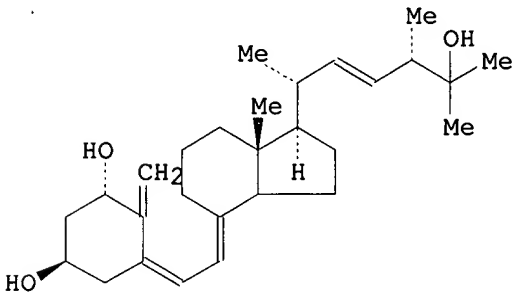
CS Dep. Clin. Chem., Univ. Zurich, Zurich, CH-8032, Switz.
SO Naturwissenschaften (1984), 71(6), 321-2
CODEN: NATWAY; ISSN: 0028-1042
DT Journal
LA English
AB Lipophilic conjugates of calciol (vitamin D3; I) [67-97-0] represented 10-90% of total I in human urine in summer, and 15-25% of total I in human blood serum. I excretion by adults was 0.1-7.0 .mu.g/day, and adults and children had 1-2 and 5-10 ng I/mL serum, resp. Blood serum and urine I (lipophilic) long-chain fatty acid (C16-24) esters (fraction A) were sepd. from I by **silica gel** column chromatog. plus gas chromatog.-mass spectrometric anal., and fraction B (calciol acetate [**2871-23-0**]) was **sepd.** by **HPLC**. Of total lipophilic I esters, .apprx.50% was represented by I acetate in human serum and urine, and the rest was long-chain fatty acid esters. Reasons for the existence of lipophilic I conjugates are discussed.

L23 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1984:452314 HCAPLUS
DN 101:52314
TI Formation of 19-nor-10-keto-25-hydroxyvitamin D3 in cultured mammalian cells
AU Lester, Gayle E.; Horst, Ronald L.; Napoli, Joseph L.
CS Dep. Med., Univ. North Carolina, Chapel Hill, NC, 27514, USA
SO Biochem. Biophys. Res. Commun. (1984), 120(3), 919-25
CODEN: BBRCA9; ISSN: 0006-291X
DT Journal
LA English
AB Cultured dog kidney cells convert 25-hydroxyvitamin D [19356-17-3] into more polar metabolites during in vitro incubations. One elutes with 1,25-dihydroxyvitamin D3 from high pressure liq. **chromatog.** **silica columns** with hexane-iso-PrOH (9:1), but can be **sepd.** from 1,25-**dihydroxyvitamin D3** by elution with dichloromethane-iso-PrOH (95:5). This peak has been isolated, purified, and identified by mass spectral anal. to be 19-nor-10-keto-25-hydroxyvitamin D3 [86852-07-5].

L23 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1983:606338 HCAPLUS
DN 99:206338
TI 24,25-**Dihydroxyvitamin D3** in serum: sample **purification** with **Sep**-Pak C-18 cartridges and **liquid chromatography** before protein-binding assay
AU Traba, M. L.; Babe, M.; De la Piedra, C.; Marin, A.
CS Unidad Metab., Fund. Jimenez Diaz, Madrid, Spain
SO Clin. Chem. (Winston-Salem, N. C.) (1983), 29(10), 1806-7
CODEN: CLCHAU; ISSN: 0009-9147
DT Journal
LA English
AB A 2-mL human serum sample was extd. with MeCN and passed through a Sep-Pak C-18 cartridge. The sample was further purified by high-performance liq. chromatog. under isocratic conditions on a normal-phase column (Radial-Pak **silica-gel** cartridge), then subjected to a

protein-binding assay. The mean concn. of 24,25-dihydroxyvitamin D3 [40013-87-4] in serum from normal adults (measured during the spring) was 2.9 .mu.g/L. The intra-assay relative std. deviation (rsd) was 7.7%; the interassay rsd was 11.2%. Purifn. of the sample with Sep-Pak C-18 and liq. chromatog. on normal plus reversed-phase columns led to a mean value of 3.4 .mu.g/L, not different from results with the given method.

L23 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1983:516270 HCAPLUS
DN 99:116270
TI Radioimmunoassay of 1,25-dihydroxyvitamin D2: studies on the metabolism of vitamin D2 in man
AU Fraher, L. J.; Adami, S.; Clemens, T. L.; Jones, G.; O'Riordan, J. L. H.
CS Dep. Med., Middlesex Hosp., London, W1, UK
SO Clin. Endocrinol. (Oxford) (1983), 19(2), 151-65
CODEN: CLECAP; ISSN: 0300-0664
DT Journal
LA English
GI

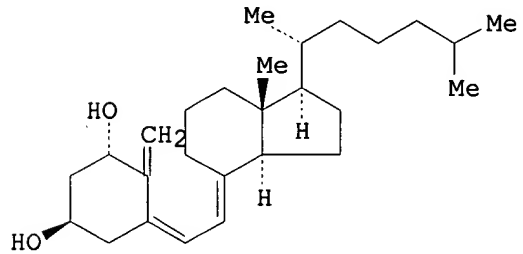


I

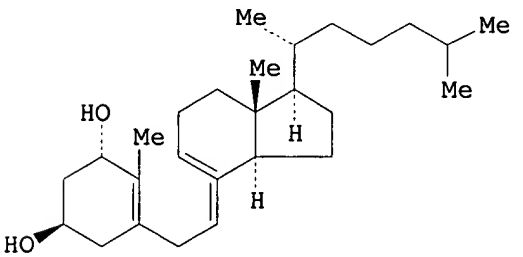
AB A sensitive RIA for 1,25-dihydroxyvitamin D2 (I) [55248-15-2] was developed using a sheep antiserum which preferentially reacts with 1-hydroxylated forms of vitamin D. An improved isolation procedure was also developed using acetonitrile for the initial extn. of serum followed by chromatog. on cartridges of C18 **silica** and high-pressure **liq. chromatog.** eluted with a ternary solvent system to **sep.** I and 1,25-**dihydroxyvitamin D3** [32222-06-3]. 25-Hydroxyvitamin D2 [21343-40-8] and 25-**hydroxyvitamin D3** [19356-17-3] were **sepd.** by further reverse-phase high-pressure **liq. chromatog.** prior to competitive protein binding assay. The limits of detection were 4.3 pmol/L for the 1,25-dihydroxy metabolites and 1.25 nmol/L for both 25-hydroxyvitamin D2 and 25-hydroxyvitamin D3. 25-Hydroxyvitamin D2 ranged 2.0-11.3 nmol/L in healthy British adults, and this accounted for 9.0% of the mean total 25-hydroxyvitamin D. I was detected in the serum of only 1 of 13 subjects tested, whereas 1,25-dihydroxyvitamin D3 was present in all ranging 48-163 pmol/L. Both I and 1,25-dihydroxyvitamin D3 were detected in the serums of hypoparathyroid patients treated with vitamin D2 [50-14-6], but the relation between 25-hydroxyvitamin D and 1,25-dihydroxyvitamin D was complex. When an excess of 25-hydroxyvitamin

D2 was present, the serum concn. of 1,25-dihydroxyvitamin D3 was disproportionately high. Conversely, in patients previously treated with vitamin D2 and receiving only vitamin D3 [67-97-0] at the time of study, the major 25-hydroxy metabolite was in the vitamin D3 form and there was a disproportionately high amt. of I. Total 1,25-dihydroxy vitamin D ranged 110-400 pmol/L and was above the upper limit of normal for 1,25-dihyroxyvitamin D3 in half of these hypoparathyroid patients treated with pharmacol. doses of vitamin D.

L23 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1982:187362 HCAPLUS
DN 96:187362
TI **HPLC separation** of 1.alpha.-**hydroxyvitamin D3** from 1.alpha.-**hydroxyprevitamin D3**
AU Ruggieri, G.; Ruggeri, P.; Fonseca, G.
CS Ist. Merceol., Univ. Napoli, Napoli, Italy
SO Rass. Chim. (1981), 33(5), 231-5
CODEN: RACHAG; ISSN: 0033-9334
DT Journal
LA Italian
GI



I



II

AB 1.alpha.-hydroxyvitamin D3 (I) [41294-56-8] was **sepd.** from its synthetic isomeric precursor 1.alpha.-**hydroxyprevitamin D3** (II) [41461-13-6] by high-performance **liq. chromatog.** (**HPLC**) on Lichrosorb Si 60, with n-C6H14-iso-PrOH (92:8) as mobile phase and UV detection at 264 nm. When the sepn. was carried out on a simulated pharmaceutical product, the latter was first extd. with CH2Cl2, and the ext. was chromatographed on **silica gel** [elution with CH2Cl2-MeOH (6:4)] to remove excipients prior to HPLC.

Searched by John Dantzman 308-4488

L23 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1980:468757 HCAPLUS
DN 93:68757
TI Sterols, aliphatic and cyclic alcohols. Analysis and occurrence
AU Leerbeck, E.
CS Statens Levnedsmiddelinst., Soborg, Den.
SO Scand. Symp. Lipids, [Proc.], 9th (1977), 107-12. Editor(s): Marcuse, Reinhard. Publisher: Lipidforum, Goeteborg, Swed.
CODEN: 43JSA4
DT Conference
LA English
AB Sterols were extd. from cocoa butter with Et2O after sapon. with boiling alc. KOH, sepd. by the column chromatog. method of J. Eisner, et al. (1972) or the thin-layer chromatog. method of E. Homberg and A. Seher (1977), and quantified by gas chromatog. Cholecalciferol (**vitamin D3**) [**67-97-0**] was extd. from pork, **purified** by **column chromatog.** on polyethylene glycol-celite, and sepd. by 2 successive **silica gel** thin-layer chromatog. procedures. The detn. of sterols in cocoa butter is carried out to detect adulteration, and the vitamin D3 content of pork is an indication of the metab. of the vitamin after its injection into swine before slaughter.

L23 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1979:192598 HCAPLUS
DN 90:192598
TI HPLC examination of vitamin A and D products
AU Macleod, I. W.; Wiggins, R. A.
CS Lab. Gov. Chem., London, Engl.
SO Proc. Anal. Div. Chem. Soc. (1978), 15(12), 329-32
CODEN: PADSDZ; ISSN: 0306-1396
DT Journal
LA English
AB Vitamin D [1406-16-2] was sepd. from vitamin A [11103-57-4] by a high-performance liq. chromatog. (HPLC) system using a 5-.mu. **silica** column with amyl alc. (0.375%) in hexane as the mobile phase. Vitamin D2 [50-14-6] was **sepd.** from **vitamin D3** [**67-97-0**] in animal feeds by **HPLC** on a 5-.mu. reversed-phase packing with MeOH/water as mobile phase. Exts. of samples were prepd. by solvent extn. or sapon.

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=> D HIS

     (FILE 'HCAPLUS' ENTERED AT 08:33:24 ON 07 AUG 1999)
           DEL HIS Y

     FILE 'REGISTRY' ENTERED AT 08:36:53 ON 07 AUG 1999
           E VITAMIN D3/CN
L1          31 S VITAMIN D3?/CN

     FILE 'HCAPLUS' ENTERED AT 08:37:29 ON 07 AUG 1999
L2        7851 S L1 OR VITAMIN D3
L3          57 S VITAMIN D 3
L4       12623 S ?VITAMIN(W)(D 3 OR D3)
L5       13348 S L2-L4
L6         493 S L5 AND CHROMATOGR?
L7         230 S L5 AND (COL OR COLUMN)(2A)(CHROMAT?)
L8         594 S L5 AND (LIQ OR LIQUID)(2A)(CHROMAT?)
L9         494 S L5 AND HPLC
L10        662 S L7-L8
L11        476 S L10 AND (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR SEPARAT?
OR

     FILE 'REGISTRY' ENTERED AT 08:41:35 ON 07 AUG 1999
L12       1101 S CARBON DIOXIDE?/CN

     FILE 'HCAPLUS' ENTERED AT 08:41:43 ON 07 AUG 1999
L13          2 S L11 AND (CO2 OR CARBON DIOXIDE OR L12)
L14          2 S L10 AND (CO2 OR CARBON DIOXIDE OR L12)
L15         79 S L11 AND (SILICA GEL OR SIO2 OR SILICA)
L16          2 S L15 AND IRRADIAT?
L17       1419 S (L3-L5)(9A) (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR
SEPARAT
L18        213 S L10 AND L17
L19         15 S L17(9A)(COL OR COLUMN)(2A)(CHROMAT?)
L20         54 S L17(9A)((LIQ OR LIQUID)(2A)(CHROMAT?))
L21         40 S L17(9A)HPLC
L22         96 S L19-L21
L23         21 S L22 AND  (SILICA GEL OR SIO2 OR SILICA)
L24          0 S L23 AND IRRADIAT?

     FILE 'LIFESCI, SCISEARCH, WPIDS, JICST-EPLUS' ENTERED AT 08:50:09 ON 07
     AUG 1999
L25       5555 S (VITAMIN OR PREVITAMIN)(W)(D3 OR D 3)
L26        329 S L25(9A)(PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR SEPARAT?
OR
L27          3 S L26(9A)(COL OR COLUMN)(2A)(CHROMAT?)
L28         14 S L26(9A)(LIQ OR LIQUID)(2A)(CHROMAT?)
L29          4 S L26(9A)HPLC
L30        222 S L25 AND ((COL OR COLUMN OR LIQ OR LIQUID)(2A)(CHROMAT?) OR
HP
L31          0 S L30 AND  (CO2 OR CARBON DIOXIDE)
L32         19 S L27-L29
L33         19 DUP REMOV L32 (0 DUPLICATES REMOVED)
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=> D 1-19 BIB ABS

L33 ANSWER 1 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 1999:181993 SCISEARCH
GA The Genuine Article (R) Number: 170VL
TI High-performance **liquid chromatographic separation** of **vitamin D-3** 3-fatty acid esters and their **liquid chromatography** mass spectrometry
AU Mitamura K (Reprint); Nambu Y; Tanaka M; Kawanishi A; Kitahori J; Shimada K
CS KANAZAWA UNIV, FAC PHARMACEUT SCI, 13-1 TAKARA MACHI, KANAZAWA, ISHIKAWA 920093, JAPAN (Reprint)
CYA JAPAN
SO JOURNAL OF LIQUID CHROMATOGRAPHY & RELATED TECHNOLOGIES, (22 FEB 1999) Vol. 22, No. 3, pp. 367-377.
Publisher: MARCEL DEKKER INC, 270 MADISON AVE, NEW YORK, NY 10016.
ISSN: 1082-6076.
DT Article; Journal
FS PHYS; LIFE
LA English
REC Reference Count: 16
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The separation of authentic vitamin D-3 3-stearate, -palmitate, oleate, and -linoleate, possible metabolites of vitamin D3, was carried out using reversed-phase high performance liquid chromatography. Liquid chromatography/atmospheric pressure chemical ionization - mass spectrometry (LC/APCI-MS) of these esters was also examined, and a deesterified peak was detected as a base peak. On the contrary, the fatty acid ester derivatized with a Cookson-type reagent, 4-phenyl-1,2,4-triazoline-3,5-dione, showed a quasi-molecular ion as an intense peak. The LC/APCI-MS data on the adducts of another Cookson-type reagent having an electron-capture substituent were also reported.

L33 ANSWER 2 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 96:770808 SCISEARCH
GA The Genuine Article (R) Number: VM384
TI THE EFFECT OF SEASON AND LATITUDE ON IN-VITRO VITAMIN-D FORMATION BY SUNLIGHT IN SOUTH-AFRICA
AU PETTIFOR J M (Reprint); MOODLEY G P; HOUGH F S; KOCH H; CHEN T; LU Z; HOLICK M F
CS UNIV WITWATERSRAND, DEPT PAEDIAT, MRC, UNIV MIN METABOL RES UNIT, JOHANNESBURG, SOUTH AFRICA (Reprint); UNIV STELLENBOSCH, DIV ENDOCRINOL, DEPT MED, ZA-7505 TYGERBERG, W CAPE W C, SOUTH AFRICA; BOSTON UNIV, SCH MED, VITAMIN D SKIN & BONE RES LAB, BOSTON, MA, 02118
CYA SOUTH AFRICA; USA
SO SOUTH AFRICAN MEDICAL JOURNAL, (OCT 1996) Vol. 86, No. 10, pp. 1270-1272.
ISSN: 0038-2469.
DT Article; Journal
FS CLIN
LA ENGLISH
REC Reference Count: 19
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Aims. To assess the effect of season and latitude on the in vitro formation of previtamin D-3 and vitamin D-3 from 7-dehydrocholesterol (7-DHC) by sunlight in two cities in South Africa, Cape Town and Johannesburg.

Methods. An in vitro study utilising vials containing 7-DHC, which were exposed to sunlight for a period of 1 hour between 8:00 and 17:00 on 1 day a month for a year. **Previtamin D-3** and **vitamin D-3** were **separated** from 7-DHC by high-performance **liquid chromatography**, and the amounts formed were calculated with the use of external standards.

Results. A marked seasonal variation in vitamin D-3 production was noted in Cape Town, with very little being formed during the winter months of April through September. In Johannesburg, in vitro formation changed little throughout the year, and was similar to that found in Cape Town during the summer, During sunlit hours, vitamin D-3 production was maximal at midday and small quantities were still being formed between 8:00 and 9:00, and between 16:00 and 17:00 during the summer, During winter in Cape Town, peak formation at midday was less than one-third of that in Johannesburg, and negligible amounts were formed before 10:00 and after 15:00.

Conclusions. The previously documented seasonal variation in serum 25-hydroxyvitamin D recorded in patients in Johannesburg is probably a consequence of the increased clothing worn and the decreased time spent out of doors during winter, rather than decreased ultraviolet radiation reaching the earth. The limited in vitro formation of vitamin D-3 during winter in Cape Town may have clinical implications insofar as the management of metabolic bone diseases like rickets and osteoporosis is concerned, Breast-fed infants resident in the area are likely to suffer from vitamin D deficiency rickets unless vitamin D supplements are provided, or the mothers are encouraged to take their children out of doors.

L33 ANSWER 3 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 96:441188 SCISEARCH
GA The Genuine Article (R) Number: UP398
TI VITAMIN-D-3 AND ITS METABOLITES IN THE TOMATO PLANT
AU PREMA T P; RAGHURAMULU N (Reprint)
CS NATL INST NUTR, DEPT ENDOCRINOL & METAB, JAMAI OSMANIA PO, HYDERABAD @ , ANDHRA PRADESH, INDIA (Reprint); NATL INST NUTR, DEPT ENDOCRINOL & METAB, HYDERABAD @ , ANDHRA PRADESH, INDIA
CYA INDIA
SO PHYTOCHEMISTRY, (JUN 1996) Vol. 42, No. 3, pp. 617-620.
ISSN: 0031-9422.
DT Article; Journal
FS LIFE; AGRI
LA ENGLISH
REC Reference Count: 28
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The tomato plant has been demonstrated to have vitamin D-like activity.
The activity was present in the leaves but not in the fruit of the plant. The chloroform extract of the leaves (containing free vitamin D and its

metabolites) and the ethanol extract of the residue (containing the glycosidic forms) were partially **purified** by **column chromatography**. The fractions corresponding to authentic **vitamin D-3**, 25-hydroxy vitamin D-3 and 1,25-dihydroxy vitamin D-3 were tested for biological activity and analysed by HPLC. The results indicate that the plant contains vitamin D-3, 25-hydroxy vitamin D-3 and 1,25-dihydroxy vitamin D-3 and their glycosidic forms. Free vitamin D-3 was observed to be the major active principle and the concentration of the free forms of the metabolites was higher than the corresponding glycosides.

L33 ANSWER 4 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 94:723483 SCISEARCH
GA The Genuine Article (R) Number: PQ585
TI FREE VITAMIN-D-3 METABOLITES IN CESTRUM-DIURNUM LEAVES
AU PREMA T P; RAGHURAMULU N (Reprint)
CS NATL INST NUTR, DEPT ENDOCRINOL & METAB, HYDERABAD 500007, ANDHRA PRADESH,
INDIA (Reprint); NATL INST NUTR, DEPT ENDOCRINOL & METAB, HYDERABAD 500007, ANDHRA PRADESH, INDIA
CYA INDIA
SO PHYTOCHEMISTRY, (OCT 1994) Vol. 37, No. 3, pp. 677-681.
ISSN: 0031-9422.
DT Article; Journal
FS LIFE; AGRI
LA ENGLISH
REC Reference Count: 26
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The occurrence of free and glycosidic vitamin D-3 and its metabolites in Cestrum diurnum leaves was investigated. The chloroform extract of the leaves (containing free vitamin D-3 and its metabolites) and the chloroform-methanol (1:2) extract (containing glycosidic vitamin D-3 and its metabolites) of the residue after glycosidase treatment were partially
purified by **column chromatography**. Fractions corresponding to authentic **vitamin D-3**, 25-hydroxy vitamin D-3 (25-OH-D-3) and 1,25-dihydroxy vitamin D-3 (1,25-(OH)(2)D-3) were found to be biologically active. These fractions were also analysed and quantified by HPLC. This is the first demonstration
of the presence of free vitamin D-3, 25-OH-D-3 and 1,25-(OH)(2)D-3 in a calcinogenic plant. Apart from the free forms, the corresponding glycosidic metabolites were also found. The concentration of free metabolites was much higher than that of the glycosidic forms.

L33 ANSWER 5 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 92:472896 SCISEARCH
GA The Genuine Article (R) Number: JG391
TI VITAMIN-D DETERMINATION USING HIGH-PERFORMANCE LIQUID-CHROMATOGRAPHY WITH INTERNAL STANDARD REDOX MODE ELECTROCHEMICAL DETECTION AND ITS APPLICATION
TO MEDICAL NUTRITIONAL PRODUCTS
AU HASEGAWA H (Reprint)
CS MEIJI MILK PROD CO LTD, CENT RES INST, DEPT MED NUTR PROD, HIGASHIMURAYAMA, TOKYO 189, JAPAN (Reprint)
CYA JAPAN
SO JOURNAL OF CHROMATOGRAPHY, (17 JUL 1992) Vol. 605, No. 2, pp. 215-220.

ISSN: 0021-9673.
DT Article; Journal
FS PHYS; LIFE
LA ENGLISH
REC Reference Count: 33
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The selectivity and sensitivity of high-performance **liquid chromatographic** analysis for the determination of **vitamin D3** and D2 content in medical nutritional **products** were improved with the aid of electrochemical detection in internal standard-oxidation/reduction mode. The relative standard deviation at the 13-nmol level for the analysis of vitamin D in products was 3.6% (n = 5). Recovery rates of added vitamin D3 were 97.5 +/- 3.0% (mean +/- S.D.). It is concluded that this method is much more selective and accurate for detection of vitamin D at the nanomolar level than ultraviolet detection methods.

L33 ANSWER 6 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 90:260515 SCISEARCH
GA The Genuine Article (R) Number: DC674
TI EXTRACTION AND **CHROMATOGRAPHIC-SEPARATION** OF 1,25-(OH)2-**VITAMIN-D3** FROM SERUM OR PLASMA WITHOUT HIGH-PERFORMANCE **LIQUID-CHROMATOGRAPHY** (**HPLC**)
AU ARMBRUSTER F P (Reprint); TAMPE J; MULLER K B; WIESE P; REICHEL H; SCHMIDTGAYK H
CS IMMUNDIAGNOST GMBH, WILHELMSTR 7, W-6140 BENSHEIM, GERMANY (Reprint)
CYA GERMANY
SO ARZTLICHE LABORATORIUM, (1990) Vol. 36, No. 4, pp. 75-80.
DT Article; Journal
FS CLIN
LA German
REC No References Keyed

L33 ANSWER 7 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 89:606063 SCISEARCH
GA The Genuine Article (R) Number: CA747
TI DETERMINATION OF **VITAMIN-D3** IN MARGARINES, OILS AND OTHER SUPPLEMENTED FOOD-**PRODUCTS** USING **HPLC**
AU JOHNSSON H (Reprint); HALEN B; HESSEL H; NYMAN A; THORZELL K
CS SWEDISH NATL FOOD ADM, BOX 622, S-75126 UPPSALA, SWEDEN (Reprint)
CYA SWEDEN
SO INTERNATIONAL JOURNAL FOR VITAMIN AND NUTRITION RESEARCH, (1989) Vol. 59, No. 3, pp. 262-268.
DT Article; Journal
FS LIFE; AGRI
LA ENGLISH
REC Reference Count: 13

L33 ANSWER 8 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 85:191674 SCISEARCH
GA The Genuine Article (R) Number: AEP01
TI COMPARISON OF **HPLC SEPARATION** OF **VITAMIN-D3** METABOLITES AND THEIR ISOTACHYSTEROL-3 DERIVATIVES
AU KOSKINEN T (Reprint); VALTONEN P
CS UNIV TAMPERE, DEPT CLIN SCI, TEISKONTIE 35, SF-33520 TAMPERE, FINLAND (Reprint)

CYA FINLAND
SO JOURNAL OF LIQUID CHROMATOGRAPHY, (1985) Vol. 8, No. 3, pp. 463-472.
DT Article; Journal
FS PHYS; LIFE
LA ENGLISH
REC Reference Count: 9

L33 ANSWER 9 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 82:456759 SCISEARCH
GA The Genuine Article (R) Number: PH350
TI HIGH-PERFORMANCE **LIQUID-CHROMATOGRAPHY** OF FAT-SOLUBLE VITAMINS - **SEPARATION** AND IDENTIFICATION OF VITAMIN-D2 AND **VITAMIN-D3** AND THEIR ISOMERS IN FOOD SAMPLES IN THE PRESENCE OF VITAMIN-A, VITAMIN-E AND CAROTENE
AU ZONTA F (Reprint); STANCHER B; BIELAWNY J
CS UNIV TRIESTE, IST MERCEOL, I-34127 TRIESTE, ITALY (Reprint); AKAD EKON POZNAN, INST TOWAROZNAWSTWA, PL-60967 POZNAN, POLAND
CYA ITALY; POLAND
SO JOURNAL OF CHROMATOGRAPHY, (1982) Vol. 246, No. 1, pp. 105-112.
DT Article; Journal
FS PHYS; LIFE
LA ENGLISH
REC Reference Count: 27

L33 ANSWER 10 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 80:177090 SCISEARCH
GA The Genuine Article (R) Number: JN854
TI BIOLOGICAL GENERATION OF TRITIATED **VITAMIN-D3** METABOLITES AND THEIR **PURIFICATION** BY HIGH-PERFORMANCE **LIQUID-CHROMATOGRAPHY**
AU CLEMENS T L (Reprint); FRAHER L J; ORIORDAN J L H; LITTLE C J; DALE A
CS MIDDLESEX HOSP, DEPT MED, LONDON W1, ENGLAND (Reprint); ROCHE PROD LTD, DEPT PHYS METHOD, WELWYN GARDEN CITY, HERTFORDSHIRE, ENGLAND
CYA ENGLAND
SO CHROMATOGRAPHIA, (1980) Vol. 13, No. 3, pp. 141-144.
DT Article; Journal
FS PHYS
LA ENGLISH
REC Reference Count: 14

L33 ANSWER 11 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 79:87076 SCISEARCH
GA The Genuine Article (R) Number: GK837
TI NATURALLY OCCURRING **VITAMIN-D3** IN FISH **PRODUCTS** ANALYZED BY HIGH-PERFORMANCE **LIQUID-CHROMATOGRAPHY** USING VITAMIN-D2 AS AN INTERNAL STANDARD
AU EGAAS E (Reprint); LAMBERTSEN G
CS DIRECTORATE FISHERIES, BERGEN, NORWAY
CYA NORWAY
SO JOURNAL OF THE AMERICAN OIL CHEMISTS SOCIETY, (1979) Vol. 56, No. 2, pp. A188.
DT Conference; Journal
FS PHYS; LIFE; AGRI
LA ENGLISH
REC No References

L33 ANSWER 12 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)

AN 79:203460 SCISEARCH
GA The Genuine Article (R) Number: GU287
TI NATURALLY OCCURRING **VITAMIN-D3** IN FISH **PRODUCTS** ANALYZED BY **HPLC**, USING VITAMIN-D2 AS AN INTERNATIONAL STANDARD
AU EGAAS E (Reprint); LAMBERTSEN G
CS DIRECTORATE FISHERIES, INST VITAMIN RES, POB 187, N-5001 BERGEN, NORWAY (Reprint)
CYA NORWAY
SO INTERNATIONAL JOURNAL FOR VITAMIN AND NUTRITION RESEARCH, (1979) Vol. 49, No. 1, pp. 35-42.
DT Article; Journal
FS LIFE; AGRI
LA ENGLISH
REC Reference Count: 12

L33 ANSWER 13 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 77:390003 SCISEARCH
GA The Genuine Article (R) Number: DV678
TI HIGH-PRESSURE **LIQUID-CHROMATOGRAPHIC SEPARATION** AND IDENTIFICATION OF VITAMIN-D2 AND **VITAMIN-D3** IN PRESENCE OF FAT-SOLUBLE VITAMINS IN DOSAGE FORMS
AU OSADCA M (Reprint); ARAUJO M
CS HOFFMANN LA ROCHE INC, DEPT DEV, FOOD & AGR PROD, NUTLEY, NJ, 07110
CYA USA
SO JOURNAL OF THE ASSOCIATION OF OFFICIAL ANALYTICAL CHEMISTS, (1977) Vol. 60, No. 5, pp. 993-997.
DT Article; Journal
LA ENGLISH
REC Reference Count: 28

L33 ANSWER 14 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 77:468562 SCISEARCH
GA The Genuine Article (R) Number: EB820
TI **SEPARATION** OF VITAMIN-D2 AND **VITAMIN-D3** BY HIGH-PRESSURE **LIQUID-CHROMATOGRAPHY**
AU WIGGINS R A (Reprint)
CS LAB GOVT CHEM, DEPT IND, LONDON SE1 9NQ, ENGLAND
CYA ENGLAND
SO CHEMISTRY & INDUSTRY, (1977) Vol. 1977, No. 20, pp. 841-842.
DT Letter; Journal
FS ENGI
LA ENGLISH
REC Reference Count: 5

L33 ANSWER 15 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 76:186562 SCISEARCH
GA The Genuine Article (R) Number: BR689
TI **SEPARATION** OF **VITAMIN-D-3** METABOLITES AND THEIR ANALOGS BY HIGH-PRESSURE **LIQUID-CHROMATOGRAPHY**
AU IKEKAWA N (Reprint); KOIZUMI N
CS TOKYO INST TECHNOL, CHEM NAT PROD CHEM, MEGURO KU, TOKYO, JAPAN; TOKYO INST TECHNOL, CHEM NAT PROD CHEM, MEGURO KU, TOKYO, JAPAN
CYA JAPAN
SO JOURNAL OF CHROMATOGRAPHY, (1976) Vol. 119, pp. 227-232.
DT Article; Journal

LA ENGLISH
REC Reference Count: 18

L33 ANSWER 16 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 75:381385 SCISEARCH
GA The Genuine Article (R) Number: AX154
TI HIGH-PRESSURE **LIQUID-CHROMATOGRAPHY** - **SEPARATION** OF METABOLITES OF VITAMIN-D2 AND **VITAMIN-D3** ON SMALL-PARTICLE SILICA **COLUMNS**
AU JONES G (Reprint); DELUCA H F
SO JOURNAL OF LIPID RESEARCH, (1975) Vol. 16, No. 6, pp. 448-453.
DT Article; Journal
FS LIFE
LA ENGLISH
REC Reference Count: 23

L33 ANSWER 17 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 74:400580 SCISEARCH
GA The Genuine Article (R) Number: U8213
TI **SEPARATION** OF HYDROXYLATED DERIVATIVES OF **VITAMIN-D3** BY HIGH SPEED **LIQUID-CHROMATOGRAPHY** (HSLC)
AU MATTHEWS E W (Reprint); BYFIELD P G H; COLSTON K W; EVANS I M A; GALANTE L
S; MACINTYR.I
CS ROY POSTGRAD MED SCH, ENDOCRINE UNIT, DUCANE RD, LONDON W12 OHS, ENGLAND
CYA ENGLAND
SO FEBS LETTERS, (1974) Vol. 48, No. 1, pp. 122-125.
DT Article; Journal
LA ENGLISH
REC Reference Count: 3

L33 ANSWER 18 OF 19 JICST-EPlus COPYRIGHT 1999 JST
AN 920143447 JICST-EPlus
TI **Separation** of **Vitamin D3** Derivatives by Reversed Phase High Performance **Liquid Chromatography.**
AU HONMA KEIKO; MAWATARI KAZUHIRO; SUGITANI KAYO; TANISHIMA KIYOO; YAMAGISHI TAKAYOSHI
CS Kanazawa Univ., College of Medical Technology
SO Kanazawa Daigaku Iryo Gijutsu Tanki Daigakubu Kiyo (Memoirs of the School of Allied Medical Professions, Kanazawa University), (1991) vol. 15, pp. 57-60. Journal Code: Y0841A (Fig. 4, Ref. 7)
ISSN: 0386-7072
CY Japan
DT Journal; Article
LA Japanese
STA New

L33 ANSWER 19 OF 19 JICST-EPlus COPYRIGHT 1999 JST
AN 910176451 JICST-EPlus
TI **Separation** of **vitamin D3** derivatives by high performance **liquid chromatography.**
AU HONMA KEIKO; SUGITANI KAYO; MAWATARI KAZUHIRO; TANISHIMA KIYOO; YAMAGISHI TAKAYOSHI
CS Kanazawa Univ., College of Medical Technology
SO Kanazawa Daigaku Iryo Gijutsu Tanki Daigakubu Kiyo (Memoirs of the School of Allied Medical Professions, Kanazawa University), (1990) vol. 14, pp. 91-95. Journal Code: Y0841A (Fig. 5, Tbl. 1, Ref. 5)

ISSN: 0386-7072
CY Japan
DT Journal; Article
LA Japanese
STA New

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=> d his

     (FILE 'HOME' ENTERED AT 08:32:22 ON 07 AUG 1999)

     FILE 'HCAPLUS' ENTERED AT 08:32:39 ON 07 AUG 1999
L1            30 S JOHANNSEN M?/AU
L2             0 S L1 AND VITAMIN D
L3             1 S L1 AND VITAMIN D2
L4             1 S L1 AND VITAMIN D3
L5             1 S L2-L4
                 SELECT RN L5 1

     FILE 'REGISTRY' ENTERED AT 08:33:18 ON 07 AUG 1999
L6             9 S E1-9

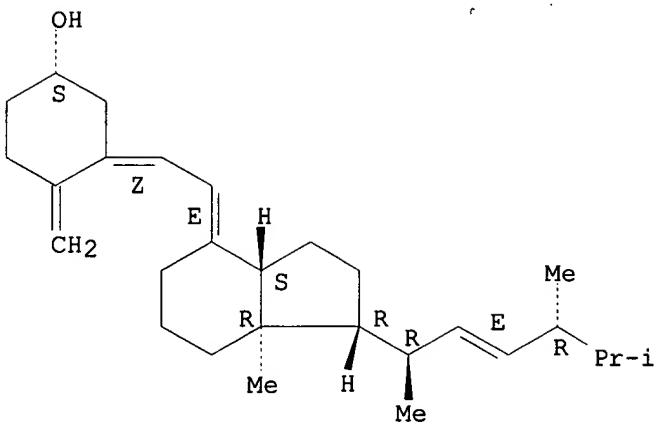
     FILE 'HCAPLUS' ENTERED AT 08:33:24 ON 07 AUG 1999
L7             1 S L5 AND L6
```

Inventor search

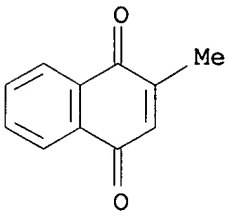
=> d bib abs hitstr

L7 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 1999 ACS
AN 1997:44341 HCAPLUS
DN 126:51588
TI Solubilities of the Fat-Soluble Vitamins A, D, E, and K in Supercritical Carbon Dioxide
AU **Johannsen, Monika**; Brunner, Gerd
CS Arbeitsbereich Verfahrenstechnik II, Technical University, Hamburg, D-21073, Germany
SO J. Chem. Eng. Data (1997), 42(1), 106-111
CODEN: JCEAAX; ISSN: 0021-9568
PB American Chemical Society
DT Journal
LA English
AB Solubilities of eight different species of the fat-sol. vitamins A, D, E, and K in supercrit. carbon dioxide were measured at (313, 333, and 353) K and over a pressure range of 20 MPa to 35 MPa. Solubilities have been detd. by an anal. method using the direct coupling of an equil. cell to a supercrit. fluid chromatog. system with UV detection. The solubilities of all fat-sol. vitamins in supercrit. carbon dioxide under the conditions investigated are in the range of 10 g/kg, except for .beta.-carotene (provitamin A), which is 3 orders of magnitude less sol. With increasing mol. mass of the vitamin, its soly. in supercrit. carbon dioxide decreases. At const. temp., the soly. of all substances increases with increasing d. At const. d., a rise of temp. results in an increase in soly. This is caused by the increasing vapor pressure of the solid.
IT **50-14-6, Vitamin D2 58-27-5,** Vitamin K3 **67-97-0, Vitamin D3 68-26-8,** trans-Retinol **119-13-1,** .delta.-Tocopherol **124-38-9,** Carbon dioxide, properties **7235-40-7,** .beta.,.beta.-Carotene **10191-41-0,** DL-.alpha.-Tocopherol **11104-38-4,** Vitamin K1
RL: PRP (Properties)
(solubilities of fat-sol. vitamins A, D, E, and K in supercrit. carbon dioxide)
RN 50-14-6 HCAPLUS
CN 9,10-Secoergosta-5,7,10(19),22-tetraen-3-ol, (3.beta.,5Z,7E,22E)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).
Double bond geometry as shown.

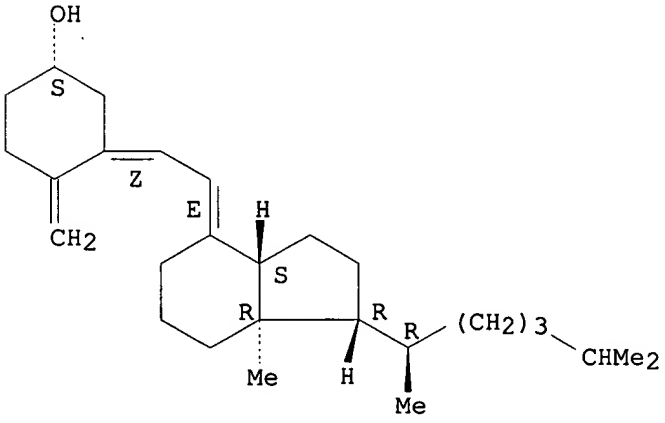


RN 58-27-5 HCAPLUS
CN 1,4-Naphthalenedione, 2-methyl- (9CI) (CA INDEX NAME)



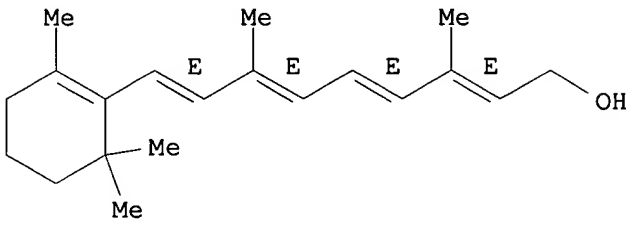
RN 67-97-0 HCAPLUS
CN 9,10-Secocholesta-5,7,10(19)-trien-3-ol, (3.beta.,5Z,7E)- (9CI) (CA INDEX
NAME)

Absolute stereochemistry.
Double bond geometry as shown.



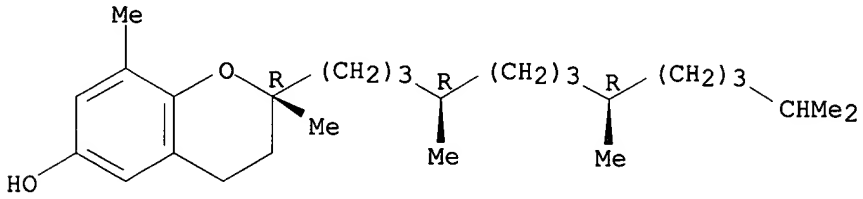
RN 68-26-8 HCAPLUS
CN Retinol (9CI) (CA INDEX NAME)

Double bond geometry as shown.

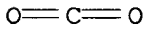


RN 119-13-1 HCAPLUS
CN 2H-1-Benzopyran-6-ol, 3,4-dihydro-2,8-dimethyl-2-[(4R,8R)-4,8,12-trimethyltridecyl]-, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



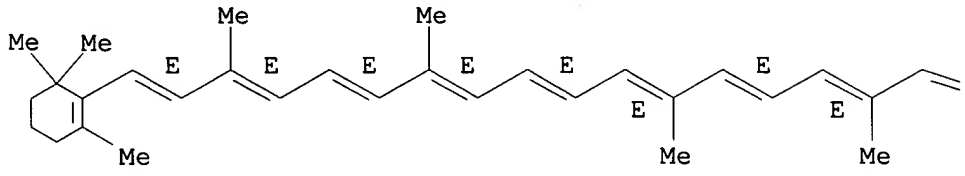
RN 124-38-9 HCAPLUS
CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)



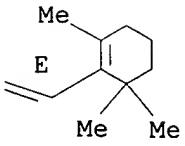
RN 7235-40-7 HCAPLUS
CN .beta.,.beta.-Carotene (9CI) (CA INDEX NAME)

Double bond geometry as shown.

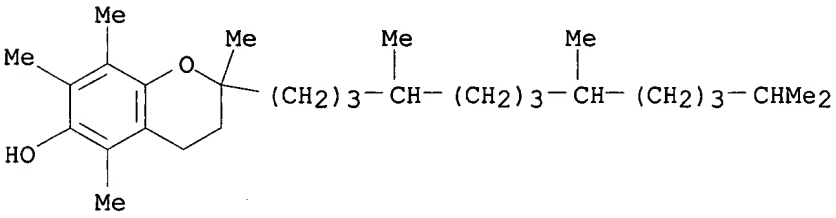
PAGE 1-A



PAGE 1-B



RN 10191-41-0 HCAPLUS
CN 2H-1-Benzopyran-6-ol, 3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)- (9CI) (CA INDEX NAME)



RN 11104-38-4 HCAPLUS
CN Vitamin K1 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

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=> D HIS

     (FILE 'HCAPLUS' ENTERED AT 08:33:24 ON 07 AUG 1999)
               DEL HIS Y

     FILE 'REGISTRY' ENTERED AT 08:36:53 ON 07 AUG 1999
               E VITAMIN D3/CN
L1           31 S VITAMIN D3?/CN

     FILE 'HCAPLUS' ENTERED AT 08:37:29 ON 07 AUG 1999
L2         7851 S L1 OR VITAMIN D3
L3           57 S VITAMIN D 3
L4        12623 S ?VITAMIN(W)(D 3 OR D3)
L5        13348 S L2-L4
L6          493 S L5 AND CHROMATOGR?
L7          230 S L5 AND (COL OR COLUMN)(2A)(CHROMAT?)
L8          594 S L5 AND (LIQ OR LIQUID)(2A)(CHROMAT?)
L9          494 S L5 AND HPLC
L10         662 S L7-L8
L11         476 S L10 AND (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR SEPARAT?
OR

     FILE 'REGISTRY' ENTERED AT 08:41:35 ON 07 AUG 1999
L12        1101 S CARBON DIOXIDE?/CN

     FILE 'HCAPLUS' ENTERED AT 08:41:43 ON 07 AUG 1999
L13           2 S L11 AND (CO2 OR CARBON DIOXIDE OR L12)
L14           2 S L10 AND (CO2 OR CARBON DIOXIDE OR L12)
L15          79 S L11 AND (SILICA GEL OR SIO2 OR SILICA)
L16           2 S L15 AND IRRADIAT?
L17        1419 S (L3-L5)(9A) (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR
SEPARAT
L18         213 S L10 AND L17
L19          15 S L17(9A)(COL OR COLUMN)(2A)(CHROMAT?)
L20          54 S L17(9A)((LIQ OR LIQUID)(2A)(CHROMAT?))
L21          40 S L17(9A)HPLC
L22          96 S L19-L21
L23          21 S L22 AND  (SILICA GEL OR SIO2 OR SILICA)
L24           0 S L23 AND IRRADIAT?

     FILE 'LIFESCI, SCISEARCH, WPIDS, JICST-EPLUS' ENTERED AT 08:50:09 ON 07
     AUG 1999
L25        5555 S (VITAMIN OR PREVITAMIN)(W)(D3 OR D 3)
L26         329 S L25(9A)(PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR SEPARAT?
OR
L27           3 S L26(9A)(COL OR COLUMN)(2A)(CHROMAT?)
L28          14 S L26(9A)(LIQ OR LIQUID)(2A)(CHROMAT?)
L29           4 S L26(9A)HPLC
L30         222 S L25 AND ((COL OR COLUMN OR LIQ OR LIQUID)(2A)(CHROMAT?) OR
HP
L31           0 S L30 AND  (CO2 OR CARBON DIOXIDE)
L32          19 S L27-L29
L33          19 DUP REMOV L32 (0 DUPLICATES REMOVED)
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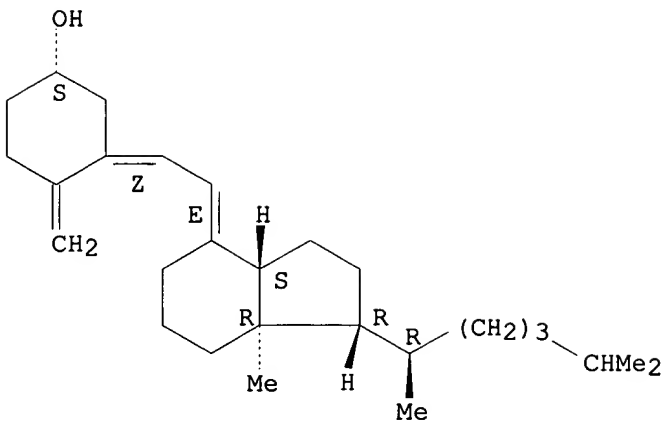
> Same 2 cites

=> D BIB ABS HITSTR

L13 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 1999 ACS
AN 1996:500657 HCAPLUS
DN 125:230937
TI Packed capillary **column** supercritical fluid **chromatography** of fat-soluble vitamins using liquid crystal polysiloxane coated particles
AU Shen, Y.; Bradshaw, J. S.; Lee, M. L.
CS Dep. Chem., Brigham Young Univ., Provo, UT, 84602, USA
SO Chromatographia (1996), 43(1/2), 53-58
CODEN: CHRGB7; ISSN: 0009-5893
DT Journal
LA English
AB Liq. crystal polysiloxane stationary phases were prepd. by coating two different polymers on deactivated porous silica particles (10 .mu.m diam., 80 .ANG. pores). Deactivation of the silica particles before coating was necessary to prep. highly efficient and inert stationary phases for supercrit. fluid chromatog. (SFC). Fat-sol. vitamins E, A, K1, K2, D2, and D3 were **sepd.** on these columns using neat supercrit. **CO2** as mobile phase. The analyses were completed within 40 min at 70.degree.. The results were compared to those obtained using a capillary column packed with less ordered liq. crystal m,m-cyanobiphenyl-substituted polysiloxane coated particles. Reduced shape selectivity was obsd. with this cyanobiphenyl phase. The response factors of vitamins A, E, K1, K2, D2, and D3 when using the flame ionization detector (FID) were detd. to be very similar.
IT **67-97-0, Vitamin d3**
RL: ANT (Analyte); ANST (Analytical study)
(packed capillary **column** supercrit. fluid **chromatog**. of fat-sol. vitamins using liq. crystal polysiloxane coated particles)
RN 67-97-0 HCAPLUS
CN 9,10-Secocholesta-5,7,10(19)-trien-3-ol, (3.beta.,5Z,7E)- (9CI) (CA INDEX NAME)

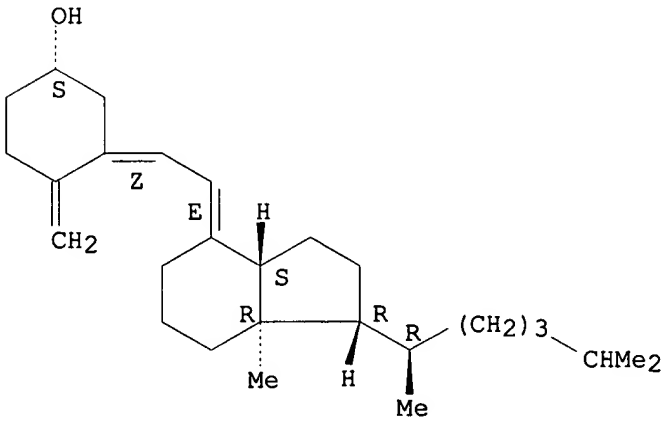
Absolute stereochemistry.
Double bond geometry as shown.


OH
S
Z
E
H
CH2
S
R
R
R
(CH2)3
CHMe2
Me
H
Me

=> D BIB ABS HITSTR 2

L13 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 1999 ACS
AN 1995:956938 HCAPLUS
DN 124:105153
TI Applications of reversed-phase high performance **liquid chromatography** using enhanced-fluidity liquid mobile phases
AU Lee, Stephen T.; Olesik, Susan V.; Fields, Steven M.
CS Department of Chemistry, The Ohio State University, Columbus, OH, 43210, USA
SO J. Microcolumn Sep. (1995), 7(5), 477-83
CODEN: JMSEEJ; ISSN: 1040-7685
DT Journal
LA English
AB Enhanced-fluidity liq. mobile phases (methanol/H2O/**CO2**) were used as eluents in reversed-phase HPLC. The low pressure drop across the column allowed serial connection of micro-scale columns to achieve the efficient **sepn.** of a coal tar sample. Other applications such as the **sepn.** of fat sol. vitamins and probucol and related compds. are shown.
IT **67-97-0**, Cholecalciferol
RL: ANT (Analyte); ANST (Analytical study)
(coal tar and vitamins and drugs **sepn.** by reversed-phase high performance **liq. chromatog.** using enhanced-fluidity liq. mobile phases)
RN 67-97-0 HCAPLUS
CN 9,10-Secocholesta-5,7,10(19)-trien-3-ol, (3.beta.,5Z,7E)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



```
=> s l1 and vitamin d2
        149509 VITAMIN
         48840 D2
          2388 VITAMIN D2
                 (VITAMIN(W)D2)
L12          1 L1 AND VITAMIN D2

=> d l12 ibib hitstr abs

L12  ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:         1997:44341  CAPLUS
DOCUMENT NUMBER:          126:51588
TITLE:                    Solubilities of the Fat-Soluble Vitamins A, D, E, and
                          K in Supercritical Carbon
                          Dioxide
AUTHOR(S):                Johannsen, Monika; Brunner, Gerd
CORPORATE SOURCE:         Arbeitsbereich Verfahrenstechnik II, Technical
                          University, Hamburg, D-21073, Germany
SOURCE:                   Journal of Chemical and Engineering Data (1997),
                          42(1), 106-111
                          CODEN: JCEAAX; ISSN: 0021-9568
PUBLISHER:                American Chemical Society
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
AB   Solubilities of eight different species of the fat-sol. vitamins A, D, E,
     and K in supercrit. carbon dioxide were measured at (313, 333, and 353) K
     and over a pressure range of 20 MPa to 35 MPa.  Solubilities have been
     detd. by an anal. method using the direct coupling of an equil. cell to a
     supercrit. fluid chromatog. system with UV detection.  The solubilities of
     all fat-sol. vitamins in supercrit. carbon dioxide under the conditions
     investigated are in the range of 10 g/kg, except for .beta.-carotene
     (provitamin A), which is 3 orders of magnitude less sol.  With increasing
     mol. mass of the vitamin, its soly. in supercrit. carbon dioxide
     decreases.  At const. temp., the soly. of all substances increases with
     increasing d.  At const. d., a rise of temp. results in an increase in
     soly.  This is caused by the increasing vapor pressure of the solid.


=>
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